Winter 2010

Mobility Matters
TRANSPORTATION ISSUES IN THE NJTPA REGION

Preparing for the Long Haul

Sustainability and Goods Movement

Drive through northern New Jersey, and the scenes meld together like a great industrial puzzle—towering waterfront cranes, 18-wheelers threading through traffic, locomotives towing cars loaded with shipping containers, jets flying so low they vibrate the car.

These sights and sounds, often curiosities for passers-by, in fact are all part of a network of goods movement that is vital to the daily lives of northern New Jersey residents. Groceries at the supermarket, jeans at the mall and every other conceivable consumer product are transported to store shelves from often far-flung locations—sometimes half a world away. Part of their price is the cost of this transport.

And northern New Jersey's freight network—with its interconnected highways, seaports, railroads and airports—does not only serve the region's residents. It is a hub for providing goods to the 30 million or more people in the Northeast and mid-Atlantic United States. In fulfilling this function, it supports tens of thousands of jobs in the region and beyond, in trucking, logistics, warehousing and other freight-related businesses, as well as the innumerable businesses that depend on the goods and supplies it delivers.

However, the sheer volume of shipping each day puts heavy demand on roads, bridges and other infrastructure. It also generates emissions that harm air quality and greenhouse gases that contribute to climate change. These effects could grow dramatically with the projected doubling of freight in the region over the next 25 years.

In these many and varied ways, the regional goods movement system is closely intertwined with the quality of life and standard of living in northern New Jersey, as well as the overall health of the broader New Jersey and national economy. Recognizing this importance, the North Jersey Transportation Planning Authority (NJTPA) has made moving freight efficiently a key planning and investment principle.

Christopher Esposito

With its well-connected network of highways, railroads, seaports and airports, northern New Jersey is home to one of the finest goods movement systems in the world. Above, an aerial view of the Port Newark area.

For the freight industry, sustainability means operating faster, safer, cleaner and more energy-efficient.

"The role the freight industry plays in our region's economy and quality of life cannot be underestimated," said Bergen County Executive and NJTPA Chairman Dennis McNerney. "It supports many thousands of jobs and directly impacts the prices of the goods we buy on any given day. We can't have a strong, sustainable economy without a strong, sustainable freight transportation system."

The goal of the NJTPA and other public agencies must be to balance support for the region's growing goods movement needs with measures to address the impacts of this growth. The freight industry itself increasingly is working toward achieving this balance, recognizing that going green makes sense from a business standpoint.

The watchword in these efforts is "sustainability"—living or working in ways that endure over time and leave the world in as good or better shape as one inherited it. For the freight industry, sustainability means operating faster, safer, cleaner and more energy-efficient, and doing it in ways that save money in the long run.

In this issue of *Mobility Matters*, the NJTPA highlights some of the ways that the government and private businesses are working to achieve a sustainable future for goods movement.

Freight in North Jersey

With its long history, northern and central New Jersey's freight infrastructure already demonstrates its own form of sustainability. Ever wonder what happened to those classic railroads on the Monopoly board? Well, most of them are still around (albeit with different names) as parts of key freight rail lines. Some of the region's highways and ports can be traced back to trade routes founded by Colonial settlers.

They have become the foundation for one of the world's most extensive regional goods movement networks. The NJTPA estimates that 550 million tons of freight moves through the region's goods movement network annually, 76 percent carried by truck.

The Port of New York and New Jersey, which includes

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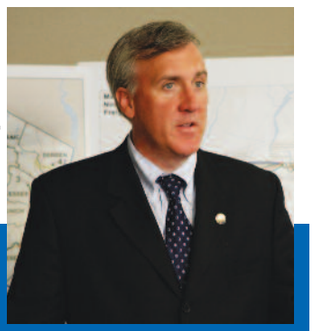

Bill Wittkop

"We can't have a strong, sustainable economy without a strong, sustainable freight transportation system."
—Dennis McNerney
Bergen County Executive,
NJTPA Chairman

The Long Haul
Continued from page 1

major container terminals in Newark and Elizabeth, is the East Coast's largest seaport and third-largest in the nation by volume (behind the ports of Los Angeles and Long Beach). A 2009 study found that port activity directly supports 165,000 local jobs and produces over $5 billion in tax revenues—rivaling the state's pharmaceutical sector.

But the recession has taken its toll. Cargo volumes in 2008 and 2009 suffered their first declines after more than 15 years of steady growth. Still, with extensive infrastructure in place, and major improvements planned, the port is poised to resume its growth when the economy rebounds.

The same holds true for the overall freight network. Northern New Jersey is home to the eastern terminus of major freight railroad lines that stretch to the West Coast. This so-called cross-continental "landbridge" carries volumes of freight rivaling that of the port. Then there's Newark Liberty International Airport, a major air cargo hub. Tying it all together is the region's intricate road and highway network with the New Jersey Turnpike at its spine. That road network is mile-for-mile the most intensively traveled in the nation.

NJTPA and Freight Planning

The NJTPA has made freight sustainability a key element of its transportation planning activities. Several long-term initiatives for sustainability called for in *Plan 2035*, the Regional Transportation Plan for northern New Jersey, are highlighted in this publication. These include moving cargo via "short-sea" shipping (see page 3), shifting freight activities to off-peak hours (page 5), redeveloping brownfields near the port (page 7) and addressing clearance limits on the Bayonne Bridge (page 9).

To advance these priorities, the NJTPA's Freight Initiatives Committee, chaired by Somerset County Freeholder Peter Palmer, meets regularly to provide a forum where public officials, private sector stakeholders and residents can grapple with these issues. The NJTPA also studies regional freight issues and supports studies by member counties and cities of more localized freight concerns (page 8). These studies help guide investments to improve regional goods movement through the annual NJTPA Transportation Improvement Program (TIP) (page 9).

Other planning activities help make freight movement more efficient and sustainable in less direct ways. The NJTPA administers a Congestion Management Process that helps identify and address the cause of roadways delays affecting passenger and freight traffic. It also monitors compliance with national air quality standards, including conducting computer modeling of projects in the TIP, helping insure environmental progress by the entire transportation sector. A Climate Change Working Group coordinates efforts to reduce greenhouse gas emissions from all forms of transportation. An analysis of the region's greenhouse gas emissions, including those produced by freight-related sources, is now underway.

For more on the NJTPA's efforts to improve freight movement and the sustainability of transportation in the region, visit www.NJTPA.org.

THE NJTPA

The NJTPA is the federally authorized Metropolitan Planning Organization (MPO) for the 6.7 million people in the 13-county northern New Jersey region. Each year, the NJTPA oversees over $2.5 billion in transportation investments. The NJTPA evaluates and approves proposed transportation improvement projects and provides a forum for interagency cooperation and public input into funding decisions. It also sponsors and conducts studies, assists county planning agencies and monitors compliance with national air quality goals. The NJTPA serves the fourth most populous MPO region in the country. NJTPA Board meetings are held bi-monthly and are open to the public.

Mobility Matters

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For Truckers, Going Green is Profitable

For the trucking industry, going green means more than helping the environment; it means boosting the bottom line—often in dramatic fashion. The reason is that reducing truck emissions of carbon dioxide and pollutants is most easily accomplished by reducing fuel consumption. And that means savings at the pump and more efficient operations for trucking companies.

As a result, the industry has been greening its operations in a big way, replacing older diesel vehicles, adding fixtures to truck bodies to make them more aerodynamic, taking steps to reduce idling, keeping speeds down, experimenting with hybrid engines and new fuel mixes and a host of other measures.

Heavy trucks represent about 10 percent of total U.S. vehicle mileage. The transportation sector overall accounts for 29 percent of greenhouse gas emissions and the trucking industry generates 20 percent of those emissions.

"Truckers keep the economy moving by delivering the goods we need every day," said Somerset Freeholder Peter Palmer, Chairman of the NJTPA Freight Initiatives Committee. "To the extent the trucking industry can contribute to a better environment, we all benefit."

Search for Solutions

"Going green is like making green," said New Jersey Motor Truck Association (NJMTA) Executive Director Gail Toth. The organization's members are always looking for fuel savings that can also benefit the environment, Toth said. The 2008 spike which brought diesel prices to nearly $5 per gallon spurred many companies to invest more in fuel efficiency. Prices since have fallen nationally to an average of $2.89 per gallon.

Toth said the process of cleaning up truck emissions has been going on for decades, to a point where particulate emissions from the newest heavy duty engines are "almost undetectable." A harder challenge is reducing nitrogen oxide emissions, which is now the focus of much attention of the industry and government.

Stuart Ramson

"Truckers keep the economy moving by delivering the goods we need every day."
—Peter Palmer
Somerset County Freeholder

The federal government has helped sustainability along not only with the "stick" of emissions regulations but the "carrot" of encouragement and incentives. Among the latter is the Environmental Protection Agency's SmartWay Program, launched in 2004 (see sidebar on page 4). SmartWay certifies green vehicles and technologies and helps companies improve their operations. More than 2,000 companies, large and small, participate.

One SmartWay participant is NFI Industries, a nationwide logistics and trucking firm with operations throughout New

Continued on page 2

Dwight Hiscano

The trucking industry has adapted to rising fuel prices and stricter government regulations with the help of a suite of new technologies

Bill Wittkop

Coca Cola Enterprises has added over 300 hybrid-electric trucks to its U.S. delivery fleet. FedEx, UPS and other companies are doing the same.

Moving Trucks by Water

Shifting goods now transported by trucks to water-borne vessels holds promise for reducing traffic congestion, emissions, wear to roads and energy use. A 2008 study found marine barges can move a ton of cargo 576 miles with a single gallon of fuel as compared with 413 ton miles per gallon for rail and 155 for trucks. The U.S. Maritime Administration (MARAD) in 2008 established a Marine Highway Program to designate marine corridors for "short sea-shipping," encourage new services along them, provide financial incentives and conduct research.

Some companies already move shipping containers on regularly scheduled barges along the East Coast. Ramping up their operations will require investing in piers, berths, access roads and other landside infrastructure to supplement existing major ports. Particularly promising are services transporting "roll-on, roll-off" trailers which don't require cranes for transfers. Yet for many companies, water transport reduces flexibility in moving goods when and where they are needed, a key factor in the failure of past service expansions. MARAD's efforts and the recent addition of stimulus funds for smaller ports may help get more freight off of highways and onto the water.

Going Green

Continued from page 3

Jersey, including at Port Newark. "We're always testing something," said NFI Senior Vice President and General Counsel Rob Barron, who heads an internal "Green Team" on eco-friendly operations. "We try to find technology that has some independent confirmation or testing and if we feel it is valid then we'll test it on our equipment." Recently the company tried lowering the horsepower of some trucks and found it helped improve fuel efficiency without noticeably affecting performance.

The company submits annual information to the EPA about the steps it is taking to meet SmartWay goals. The EPA uses a computer model to rate the company's progress. NFI has earned the EPA's highest rating. "We're on the forefront, always looking for ways to improve our fuel economy and improve our carbon footprint," said NFI Field Manager Mike Mundy.

Innovation

More innovative approaches involving alternative powertrains are gaining footholds in the industry and could be the wave of the future. All major truck makers are marketing hybrid diesel-electric trucks, but they can cost 40 percent more than conventional trucks—a major obstacle for many carriers, even though they offer a potential 50 percent improvement in miles per gallon (from 8 mpg to 12 mpg or more).

Still, some companies are making the plunge. According to a June Duke University study, more than 95 U.S. commercial and utility truck fleets have so far purchased or are testing these hybrids, including FedEx, UPS, Coca-Cola and Walmart. The hybrid truck industry has grown from only 200 vehicles produced in 2006 to an expected 4,850 in 2010. All-electric trucks are also being developed. Some have been put into use at the Port of Los Angeles and elsewhere for short-distance container movements.

Alternative fuel is another option. Natural gas trucks are being used in some niche markets but the bigger potential likely involves biodiesel. Created from vegetable oil or other renewable resources, biodiesel is usually mixed in concentrations of 2 to 20 percent with conventional diesel fuel. It reduces most emissions, including CO_2, significantly, though many trucking companies remain concerned about its effects on engine performance.

In Newark, Innovation Fuels operates a biodiesel refining facility along the Passaic River at a once-abandoned industrial brownfield site.

The future of alternative truck technologies and fuels got a boost in 2009 with the federal American Recovery and Reinvestment Act, which devotes more than $1 billion in stimulus funding to spur freight sustainability.

Down Economy

Recently, emissions from the trucking industry have fallen significantly due to the decline in business. Toth, of the NJMTA, said it's "pretty dire out there" for her members. "Over the last two and a half years there's far fewer miles being placed on trucks. In fact, there's a lot of trucks parked—hopefully just temporarily."

The downturn has caused many smaller firms and independents to defer major investments in sustainability—including the purchase of new, more fuel-efficient vehicles, which can cost $125,000.

But smaller investments that can lead to savings have continued. One low-cost solution that has grabbed the attention of truckers are nylon mesh mud flaps that let air through, reducing drag (see photo on next page). The "Eco-flaps," which cost less than $50 each, are said to allow a 3.5 percent mpg improvement while reducing the "rain spray" that presents hazards to vehicles behind them.

Trends in what gets shipped and when have also been affected by the recession. The practice of "just in time" shipping—once all the rage among manufacturers, wholesalers and retailers who sought to reduce inventory by having goods delivered as needed—has

Continued on next page

SmartWay on the Highways

Among the techniques and equipment widely being used by trucking companies in the EPA's SmartWay program are:

SmartWay℠ Transport Partnership
U.S. Environmental Protection Agency

- Reduced idling through on-board auxiliary power units that provide electricity, heating and cooling to cabs, or through external units provided at many truck stops.
- Improved aerodynamics by adding fairings, cab extenders, trailer skirts and other features to the vehicles.
- Improving logistics through more efficient routes and delivery schedules, load matching and improved shipping and receiving.
- Reduced rolling resistance with automatic tire inflation systems and replacing the standard two tires per wheel with a single wide tire.
- Reducing highway speed through electronic engine controls together with driver education and incentives.
- Improving driver training on topics such as engine speed optimization, smoother braking and acceleration, anticipatory driving and optimal gearing.
- Reducing vehicle weight by purchasing modern truck tractors and trailers with aluminum alloy components or retrofitting existing fleets.

NFI Industries

Trucking company NFI Industries has an internal "Green Team" on the lookout for new eco-friendly ways of doing business.

Study Sees Financial and Traffic Upsides in Extending Port Hours

The area's ports may soon need help on the night shift. A study by the New Jersey Institute of Technology (NJIT) concludes extending business hours beyond the general 6 a.m. to 5 p.m. window they're open now could increase port productivity and ease congestion on the region's highways.

The idea has broad support among industry stakeholders, Branislav Dimitrijevic, one of the study's authors, said in a presentation at the NJTPA's December Freight Initiatives Committee meeting. The competition with commuter traffic on a typical day is enough to cost a trucker a handful of trips between Port Elizabeth-Newark and the warehouse district near Turnpike exit 8A, the study notes.

"The port is especially dependent on a highway network located in the most congested area of the state," Dimitrijevic said. And we can expect the traffic to get worse going forward: according to NJTPA estimates, port container traffic is expected to grow dramatically by 2035.

However, Dimitrijevic cautioned that "everyone has to be on board for this to be a successful strategy." Extended hours at the ports will do no good if the truckers don't work off-peak shifts or the warehouses won't stay open for deliveries. But if everyone buys in, extending the hours could grow container shipping business within existing facilities and with existing equipment, cutting the cost per unit and improving productivity. Because they will avoid peak hour traffic, trucks will operate more efficiently without unnecessary stopping and idling, thereby reducing their emissions and carbon footprint.

Bill Witkop

Research by NJIT indicates opening the ports at night could encourage truckers to work off-peak hours, allowing them to avoid costly traffic delays or contributing to congestion themselves. Below, a steady flow of trucks exit and enter Port Newark.

The study noted that a similar strategy was implemented in the Los Angeles-Long Beach area. Shippers there were encouraged to use the extended hours at the port terminals by instituting a fee for container pickups during peak hours. This shifted 40 percent of truck traffic to off-peak hours and gradually changed the area's shipping culture, Dimitrijevic said. On the minus side, such pricing practices could drive shippers to competing ports, or the costs could be passed down to consumers, he said.

The study was funded by the New Jersey Department of Transportation. A link to the full report, titled "Extended Hours of Operation at the Port Facilities in New Jersey: A Feasibility Analysis," is available on the Freight Planning page at www.NJTPA.org. ●

taken a big hit. With business scarce, many shippers can't afford to make multiple trips with half-empty trailers.

Some manufacturers, too, are deferring orders of supplies until they can be assured that they can sell all of what they produce. The net effect has been greater efficiency in goods movement and a reduction in emissions.

As the economy rebounds and testing of new technologies continues, Toth believes "we're going to see some exciting developments" in trucking sustainability. "When you're saving on fuel and saving on your emissions, it's just a win-win for everybody." ●

The porous Eco-Flaps, manufactured by Andersen Flaps, are a simple yet effective technology that reduces trucks' rain spray and improves fuel mileage by reducing drag.

Warehouses Lighten Electric Bills with Solar Power

Think you have it tough air conditioning a home in the summer? Try keeping 1.7 million square feet of warehouse space as cold as a refrigerator.

About three years ago, the electric bills at Hall's Warehouse Corp. were soaring through the roof—so they built a new roof. Today, the company's three warehouses in South Plainfield, Middlesex County, are equipped with what comprises one of the largest rooftop-mounted solar power systems in the country, supplying 3.2 megawatts per year of clean, affordable energy.

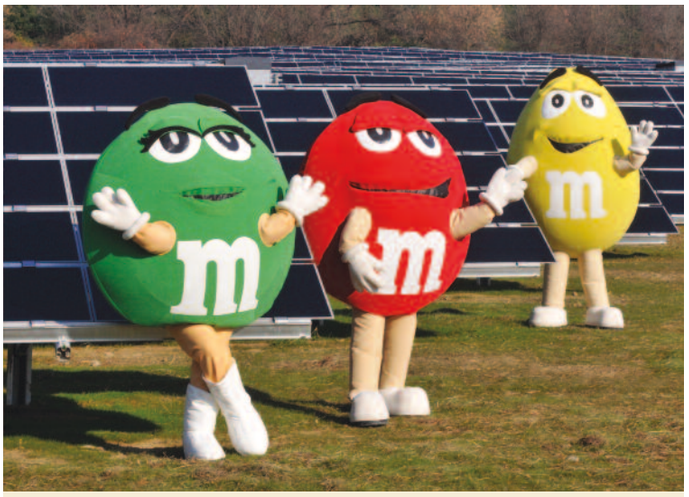
A growing number of warehousing and distribution businesses in New Jersey are tapping the sun to better their bottom lines. Warehouses are uniquely suited to go solar with their massive, flat roofs.

Hall's 30,000 panels and laminates produce over 20 percent of the buildings' electricity needs. The solar array (as collections of solar panels are called) eliminates some 2,250 tons of CO2 emissions annually. "We're not using as much power now, therefore [the utility companies] can use it for something else," said Hall's President William E. Jayne III.

This fits with the State of New Jersey's comprehensive Energy Master Plan, which calls for 30 percent of its electricity to come from renewable energy sources by 2020. To that end, the New Jersey Clean Energy Program (njcleanenergy.com) offers incentives to businesses and residents to adopt alternative energy technologies.

New Jersey now ranks first in the nation for solar panels per square mile, with some 4,700 installations. It's no coincidence that New Jersey and California, two states that offer among the best incentives for businesses to try solar technologies, have seen the most widespread adoption, said Patrick Sahradnik, the energy resource coordinator at Hall's.

Rooftop and aerial views of one of Hall's Warehouse Corp.'s three facilities in South Plainfield, Middlesex County.



A 28,000-panel solar garden recently debuted on an 18-acre field next to the Mars Chocolate North America headquarters in Hacketstown, Warren County.

"I see solar panels going the way computers and cell phones did a few years ago," Sahradnik said. "As the technology continues to improve and the panels generate more electricity, it's going to become more mainstream and we'll see it on more homes and buildings."

Other notable warehouse applications of solar power include the following:

- In November, Mars Chocolate North America unveiled a 28,000-panel solar garden at its Hackettstown headquarters, where M&M's candies are manufactured. Although Mars' setup varies from Hall's—the panels are on 18-acre area of land rather than a roof—the results have been similar. The solar garden has the capacity to provide about 2 megawatts of power, or one-fifth of the plant's peak energy consumption, according to the company.
- FedEx Ground installed a 2.42 megawatt solar-electric system on its distribution hub in Woodbridge last year. Some 12,400 panels cover 3.3 acres of space. The system produces up to 30 percent of the facility's annual energy needs.
- Secaucus developer Hartz Mountain Industries unveiled a 412-kilowatt solar array atop the Meadowlands Exposition Center in 2009. The company announced the system was the first of many it planned to install on the roofs of its portfolio of buildings, predominantly warehouses.
- East Coast Warehouse has installed 5,000 roll-on solar panels on the roof of its 350,000 sq. ft. facility at Port Elizabeth. The lightweight panels are adhered to the facility's metal roof. The 800-kilowatt array provides 40 percent of the facility's energy needs.

Many solar installations are being made possible through public-private partnerships. With the aid of public grants, utility companies build arrays at no cost to the warehouse owners and sell them the electricity at a fixed, affordable price. In some cases, the sites have been used to pilot the latest technologies.

"Warehouses in northern New Jersey are serving as valuable laboratories in the emerging science of solar power," said Essex County Executive and NJTPA Secretary Joseph DiVincenzo. "The progress being made on these rooftops can help us cut down our dependence on fossil fuels and replace them with a clean, renewable energy source."

Developing Brownfields Before Greenfields

To Gerard von Dohlen, the future is looking up—literally. The president of Port Newark Refrigerated Warehouse Inc. believes that because of high land prices, businesses around the port have to consider building higher rather than horizontally, as stacking up means less floor space.

"It costs $1 million per acre around the Ironbound [section of Newark]," von Dohlen said in a presentation to the NJTPA Freight Initiatives Committee last winter called "Warehousing in the New Economy." "I'm not parking trucks on $1 million per acre."

Von Dohlen's company is constructing a 127-foot-high, state-of-the-art warehouse a short drive from the port in Newark. The facility will be outfitted with an automated system resembling a forklift on rails that can store and retrieve pallets in total darkness within moments. Its footprint is 85 percent smaller than a conventional facility with the same capacity.

Von Dohlen's quest to make the most of limited space is imperative for freight companies operating in the densely populated urban core of northeastern New Jersey, encompassing the cities of Newark, Elizabeth and Jersey City. In contrast, warehouses and freight facilities in outlying areas where land is cheap typically can be built to sprawl over many acres.

The scarcity of developable land in the urban core has prompted the reuse of abandoned or underused industrial brownfield sites for new freight facilities. However, even with government assistance for cleanups, the sites can impose added costs for permitting and construction as well as legal uncertainties and delays. Still, companies are making the commitment. In 2009, AMB Property completed the Pulaski Distribution Center in Jersey City, offering 875,000 square feet of warehouse space on a 50-acre former landfill.

The Albert Steel Drum site, Newark, was used for chemical-handling businesses for decades until it was closed in the late 1970s. Recognizing its excellent location, a developer remediated the site, which is now occupied by a FedEx facility.

The financial payoff is that the urban core offers ready access to the East Coast's largest port, an international airport, major rail terminals and a confluence of major highways reaching many millions of consumers. A large employment base is right at hand.

Economic Advantages

Location in the urban core also has important environmental benefits. *Plan 2035*, the NJTPA's long-range transportation plan, notes that it helps preserve open space in outlying areas and spares the region the additional traffic and emissions from trucks driving from the port to the suburbs and back to the urban core.

"Locating freight companies near the port makes great sense from both an economic and environmental standpoint," said Tom DeGise, Hudson County Executive and Vice Chairman of the NJTPA Project Prioritization Committee. "Trucks can make multiple pickups and deliveries over short distances, and that improves efficiency. Our cities get much-needed jobs."

"Locating freight companies near the port makes great sense from both an economic and environmental standpoint."
— Tom DeGise Hudson County Executive

A Portfields Initiative created in 2004 by the Port Authority of New York and New Jersey in partnership with the New Jersey Economic Development Authority identified and targeted 21 brownfield sites for redevelopment, potentially accommodating 12 million square feet of new warehouse, distribution and office space. At the end of 2009, 5 million square feet of space had been constructed.

Buildings near the port are also becoming greener. In addition to its vertical configuration, von Dohlen's Newark building design calls for a grass-covered roof that reduces rainwater runoff and an energy-efficient refrigeration system. Newer buildings like von Dohlen's and AMB's Jersey City warehouse are designed to meet Leadership in Energy and Environmental Design (LEED) standards, a green buildings rating system.

Stuart Ramson

Recession's Impact

Numerous brownfield sites remain available for sustainable freight facilities near the port. In 2003, over 2,500 acres of brownfield sites within 5 miles of the port were identified in a joint study by the NJTPA and the New Jersey Institute of Technology. NJIT brownfields expert James Mack, who served on the project's study team, said progress on these tracts has slowed, at least for the moment.

"When the economy went south, demand for some of these sites went with it," Mack said.

However, he said there have been some success stories since the study's release, such as a project that involved capping and redeveloping a landfill in Carteret for a pair of warehouses. Another example lies in Newark, where a long-vacant pesticide plant-turned drum cleaning business known as the Albert Steel Drum tract was remediated and redeveloped as a FedEx facility.

Still, with vacancy rates rising in the generally lower-cost warehouse facilities on the urban fringe, facilities in the urban core are facing stiffer competition for tenants. Over the long term, as the flow of commerce rebounds and cost factors change—including possible rises in fuel prices or new greenhouse gas restrictions—companies are likely to make more commitments to sustainable freight facilities in the urban core. ●

Study Looks to Future of Freight Movement in Morris County

As part of NJTPA's efforts to support the planning work of its "subregions"—the 13 counties and two cities represented on the NJTPA Board of Trustees—the agency has provided funding to Morris County for a study that will help ensure the sustainability of the county's Interstate highways and freight rail network.

Companies in Morris County employ over 86,000 workers in manufacturing, wholesale and retail trades that rely on efficient goods movement. The Morris County Freight Infrastructure & Land Use Analysis aims to identify future opportunities for freight-related development and infrastructure upgrades, with an emphasis on improving connections between trucks and trains.

The first step in the study, which commenced in the fall, is to take stock of the county's infrastructure, land use conditions, public policies, freight-based businesses and their traffic impacts. This information will be studied to determine the potential and limits for the industry's growth, and areas where that growth can best take place. A series of recommendations for infrastructure and facilities improvements will be made.

"This study will help our county make decisions that ensure goods are moved in a safer, more reliable way in the years to come," said Gene Feyl, Morris County Freeholder and Chairman of the NJTPA Project Prioritization Committee. "A thriving freight industry means a stronger economy and a better quality of life for residents."

The effort was authorized last year as part of the NJTPA's Subregional Study Program. The study is projected to cost $300,000, which will be paid for through $240,000 in federal funds provided by a NJTPA grant and $60,000 from a local match.

The Morris County study is one of 12 studies currently funded by the NJTPA Subregional Studies program. The two-year grant program assists subregions in refining and developing transportation improvement strategies including addressing freight needs—rooted in *Plan 2035*, the NJTPA's long range transportation plan. Ultimately, the study program aims to generate project concepts ready for further development. For example, a Tremley Point connector road scheduled for construction in Union County (see story at top of next page) was originally investigated as part of an NJTPA subregional study. ●

"This study will help our county make decisions that ensure goods are moved in a safer, more reliable way in the years to come."

—Gene Feyl
Morris County Freeholder

Stuart Ramson

NJTPA Studies Truck Rest Stop Capacity, Rail Crossing Safety

Investigating freight needs and solutions is a key responsibility of the NJTPA. In addition to funding research focusing on issues in counties and cities (see Morris County article above), the NJTPA conducts studies of freight issues that hold regionwide significance.

In January, the NJTPA completed the North Jersey Truck Rest Stop Study Refinement, which built on the success of an initial 2008 study. These studies point to a lack of adequate rest and service stops—especially near Port Newark/Elizabeth—available to truck drivers, who are subject to federal rules reducing the hours they can spend on the road each day. Regionwide the studies found a shortage of more than 1,300 truck parking spaces.

The rest stop shortage poses a potentially dangerous situation, as truckers are often forced to pull over for a rest on streets or highway shoulders, where they're vulnerable to accidents. The shortage could also push fatigued drivers to stay on the road longer, mixing with car traffic.

The North Jersey Truck Rest Stop Study Refinement expands on its predecessor's findings by making new recommendations for additional truck parking capacity and coordination between the public and private sectors.

While the volume of truck traffic has declined with the recession, the study concludes that "short-term trends should not delay progress on solving the long-term truck parking demand issue."

In 2009, the NJTPA and a consultant team completed the second phase of its Freight Rail Grade Crossing Assessment Study. The study is part of an ongoing effort to address the impacts of heavier traffic along the region's major freight rail lines.

In the study's first phase, 64 freight rail crossings on five major freight lines were cata-

Bill Wittkop

The NJTPA worked with a consultant to identify rail crossings along five major freight lines that were in need of improvement.

NJTPA Funds Projects to Improve Regional Goods Movement

Major projects to improve the efficiency of the regional freight system have been advanced through the NJTPA's planning and capital funding process. *Plan 2035*, the Regional Transportation Plan for northern New Jersey, identifies the region's needs and projects being considered for implementation over the next 25 years. Based on *Plan 2035*, the NJTPA allocates approximately $2.5 billion annually in state and federal funding through its Transportation Improvement Programs (TIP) for priority projects and programs.

The following are some current and future freight-related projects funded through the TIP. A number are part of the Liberty Corridor (LC), a congressionally designated economic development and transportation zone, created and funded with the assistance of U.S. Sen. Robert Menendez.

National Docks Intermodal Project (Waldo/Bergen Tunnels) (LC): A public-private partnership was established between the New Jersey Department of Transportation and Conrail to improve overhead clearances on the CSX National Docks Branch. The project will raise the roof of both tunnels to allow double-stack movements of high-cube intermodal containers. $24 million, underway.

North Avenue Project (LC): Partially funded by the Liberty Corridor, this project is designed to improve access to Port Newark/Elizabeth and Newark Liberty International Airport. It will smooth the flow of truck traffic to and from the port while separating it from auto traffic headed to the area's hotel and retail establishments. $224 million, implementation in 2-4 years.

Wittpenn Bridge Replacement (LC): Addresses a major chokepoint for commuters and motor carriers by replacing the existing structure with a modern lift-span bridge with 12-foot travel lanes. The bridge will improve connectivity to underutilized brownfield properties. $91 million, underway.

Port Reading Junction (LC): Addresses a major chokepoint in the state rail system by reconfiguring a single-track rail junction, used by over 40 daily freight trains, to provide double-track train operations. This will improve the efficiency of train operations and enhance the effectiveness of the recently completed double-tracking of the Conrail Lehigh Line. $13.4 million, underway.

Cross Harbor Carfloat (Greenville Yard) Improvements: The carfloat operation of the former Cross Harbor Railroad has been acquired by the Port Authority of New York and New Jersey. This project will fund the purchase of the Greenville Yard property, where the carfloat operation is based, and bring the badly deteriorated float bridges to a state of good repair. $37.5 million, underway.

Tremley Point Connector Roadway (LC): A roadway and bridge will be constructed between Turnpike exit 12 and the Tremley Point area of Carteret. The project will provide direct motor carrier access to the redeveloping industrial area and improve access to several brownfield sites, making them more desirable development candidates. $92 million, implementation in 2-4 years.

Chester Branch Railroad Rehabilitation: This project, funded by the American Recovery and Reinvestment Act (also known as the economic stimulus), will bring the Chester Branch Railroad, owned by Morris County and operated by the Morristown & Erie Railroad, up to Federal Railroad Administration Class 2 standards. The railroad is an important part of the county's efforts to spark economic development and reduce truck traffic on local roads. $5.8 million, underway. ●

Somerset County Freeholder and NJTPA Freight Initiatives Committee Chairman Peter Palmer (left) and NJTPA Director of Freight Planning Ted Matthews visit a freight rail carfloat operation at Greenville Yard, Jersey City.

logued, evaluated and photographed to gather data on auto traffic at the sites, accidents, surrounding land uses and pedestrian access. Five crossings deemed in most need of improvement were selected for more detailed analysis and recommendations, resulting in a "toolbox" that was then applied at nearly a dozen other locations during phase two.

The site that ranked most in need of improvement was the heavily trafficked intersection of Inman Avenue and the Lehigh Line in Edison. The crossing recently underwent several upgrades, including the installation of new median curbing and crossing gates that completely block access to the tracks when a train is coming, and the placement of warning signs leading up to the site.

"This study will help us address delays, safety and quality of life issues while also making sure freight gets where it needs to go," said Union County Freeholder Daniel P. Sullivan, Vice-Chairman of the NJTPA's Freight Initiatives Committee.

For more on the truck stop and rail crossing studies, visit the "Freight Planning" page at www.NJTPA.org. ●

A pair of NJTPA-led studies recommend locations throughout the region where truck rest stop capacity could be expanded.

The Bayonne Bridge: Too Low for Cargo

The Port Authority of New York and New Jersey (PANYNJ) is weighing several options for increasing the clearance beneath the Bayonne Bridge, a structure that has been likened to a roadblock to future commerce.

Opened to traffic in 1931, the bridge accommodates 7 million vehicles per year crossing the Kill Van Kull between Bayonne and State Island. About 80 percent of cargo ships headed to the region's ports must pass beneath it.

However, the aging span, which has an air draft of 151 feet, can no longer accommodate many modern container ships, a situation that threatens to put Port Newark/Elizabeth at a competitive disadvantage. Fixing the bridge also carries great environmental importance, as it would ensure that much of the goods consumed in the region can continue to travel to northern New Jersey by ship rather than being trucked in from distant ports.

The bridge height issue was the subject of a presentation at October's NJTPA Freight Initiatives Committee meeting, where Somerset County Freeholder Peter Palmer told the audience inaction was not an option.

"While we may tend to focus on the cost of replacing this bridge, we really should be looking at the cost of not replacing it," Palmer said. "We can't afford to lose the position that the port holds in the global economy, and it's necessary to do something with the bridge in order to achieve that."

Port Authority officials say the situation will take on a greater urgency once the widening of the Panama Canal is complete in 2014. The project will enable the famed passage to handle ships with twice as much capacity to pass through. If these ships can't berth at Port Newark/Elizabeth, officials fear they may instead use a competing port, causing a loss of jobs and tax revenues, and rising goods prices locally. Already, some larger vessels have scraped the bridge's underside.

Last year, the Port Authority retained the Army Corps of Engineers to take a preliminary look at three potential solutions: raising the roadway; building a new bridge; and building a new tunnel to handle vehicle traffic. The Port Authority continues to analyze the costs, environmental effects, traffic impacts and other considerations associated with those options, as well as alternative ideas, such as equipping the roadway to open like a drawbridge. ●

Joe Becker

The Port Authority of New York and New Jersey is examining options to increase the clearance beneath the Bayonne Bridge, which connects Hudson County to Staten Island.

Port Authority Develops Strategy to Sink Maritime Emissions

The Port Authority of New York and New Jersey has completed its first Clean Air Strategy, a 10-year plan to reduce harmful emissions even as port operations grow.

The document, released in the fall, outlines an extensive suite of present efforts by the Port Authority and its partners to reduce maritime emissions, and then lays out future actions that push beyond those seen at most of the nation's other ports.

The strategy sets a pair of tangible goals: an annual 3 percent net reduction (30 percent overall) in pollutants that negatively impact human health and the environment, and an annual 5 percent net decrease (50 percent overall) in greenhouse gases associated with climate change. The document stresses these are just the "minimum acceptable levels" of reductions; it's hoped that the actual numbers go well beyond.

The following is a sample of the many actions recommended in the Clean Air Strategy to reduce emissions among five port-related sources:

Cargo Vessels: Offer companies incentives to switch to low-sulfur fuel, incentives for ships to reduce speeds approaching the harbor, expand partnerships with international ports that encourage "clean ships."

Cargo-Handling Equipment: Accelerate the modernization/decommission of old equipment, replace portion of fleet with alternative power equipment, switch from diesel to electric cranes.

Trucks: Offer financial assistance for owners to replace older trucks, institute a fast lane at the gate for newer vehicles, public-private partnerships for retrofitting engines to handle alternative fuels, develop parking areas with plug-in technology to reduce engine idling.

Rail: Retrofit switchers with GenSets (see story on next page), install anti-idling technology in locomotives, extend and modernize rail lines that serve terminals.

Harbor Craft: Revitalize the cross-harbor barge system that carries rail cars from Jersey City to Brooklyn,

Not in My Rail Yard: Making the "Switch" to Cleaner, Quieter Locomotives

With the aid of some breakthrough technologies, rail operators have made impressive strides over the last few years in cutting down the emissions and noise produced by idling locomotives. Particular progress has been made with switchyard locomotives, or "switchers," machines used to assemble trains and move cars around rail yards.

One technology seeing increased use nationally is the ultra-low emission GenSet locomotive. Unlike the powerful, single-engine diesel locomotives historically used in rail yards, a GenSet contains three smaller engines. GenSets power up only the number of engines necessary to move a load, so if it's a small haul, just one or two engines will be used. The design allows GenSets to burn less fuel, run quieter and cost less to maintain than conventional switchers.

The NJTPA Board approved a project which will assist in retrofitting a pair of switchers at Port Newark/Port Elizabeth with GenSets. The technology will reduce the locomotives' greenhouse gas emissions an estimated 25 percent, ozone pollutants by 86 percent and particulate emissions by 74 percent.

The $3 million equipment purchase will be funded through a public-private partnership, with the NJTPA awarding a $1.8 million grant, the Port Authority of New York and New Jersey providing $600,000, and freight rail companies CSX and Norfolk Southern each contributing $300,000.

"This is an innovative step forward in the Port Authority's ongoing efforts to be good environmental neighbors," said Matthew Holt, Hunterdon County Freeholder and Chairman of the NJTPA Planning and Economic Development Committee. "Replacing the older locomotive engines with GenSets will mean cleaner air and lower energy costs."

Norfolk Southern took the green switcher concept a step further in September, unveiling an all-electric locomotive prototype called the NS 999. This plug-in, zero-emissions switcher is powered by more than 1,000 batteries without the aid of a diesel engine. Still considered experimental, the NS 999 was developed by Norfolk Southern in partnership with the U.S. Department of Energy and Federal Railroad Administration, among others.

"Investing in these new green locomotives will help us protect the environment while significantly cutting our energy costs," said Bergen County Executive and NJTPA Chairman Dennis McNerney. "It's important that we continue to seek out technologies that help make our freight transportation system sustainable for the future." ●

The NJTPA recently helped fund the purchase of a pair of low-emission GenSet locomotives for use at Port Newark/Elizabeth.

The Port Authority has made the modernization of cargo handling equipment at its facilities a top priority.

identify places where tugboats can tie up and shut down between assignments, implement a hybrid tugboat pilot program.

To ensure these actions are working, an Emissions Inventory will be updated with new measurements every two years. In addition, the Clean Air Strategy will be updated every two years to reflect progress on its implementation, changing regulations, the availability of new technologies and the economic climate.

"Working cooperatively with our port partners, we can find ways to clean the air while continuing to increase our cargo business," said Port Authority Executive Director Chris Ward, a member of the NJTPA Board of Trustees. "We will continue to develop innovative ways to grow the port in an environmentally sustainable way."

The Clean Air Strategy was developed in collaboration with the U.S. Environmental Protection Agency, New Jersey Department of Environmental Protection, New York State Department of Environmental Conservation, New York City Economic Development Corporation, New York Shipping Association and the cities of Bayonne, Elizabeth, Jersey City, Newark and New York. For more information on the strategy, visit www.panynj.gov/about/port-initiatives.html. ●

Joseph Sabbia

A freight train travels eastbound on the Lehigh Line in Edison.

MobilityMatters

TRANSPORTATION ISSUES IN THE NJTPA REGION

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-Solar-Powered Warehouses

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